

Application/Control Number: 10/050,912  
Art Unit: 2675

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Claims 1-38 (canceled).

39. An image sensing apparatus comprising:  
image sensing means for converting an optical  
image into electric signals and outputting the electric  
signals as image signals;

photometry means;

luminous exposure adjustment means for determining  
a plurality of luminous exposures to be used in said  
image sensing means on the basis of a photometry result  
obtained by said photometry means;

control means for controlling said image sensing  
means so as to sense an object a plurality of times  
using the plurality of luminous exposures determined by  
said luminous exposure adjustment means; and

image signal synthesis means for synthesizing  
image signals of a plurality of images of the object

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outputted by said image sensing means to generate a single image.

40. The image sensing apparatus according to  
5 claim 39, wherein said photometry means performs photometry on each of a plurality of divided areas of an image sensed by said image sensing means.

41. The image sensing apparatus according to  
3 claim 40 further comprising main object determination means for determining a divided area which includes a main object among the plurality of divided areas,

wherein said luminous exposure adjustment means controls said image sensing means to use a first  
5 luminous exposure which is suitable for the divided area including the main object, which is determined by said main object determination means, and to use at least one of second and third luminous exposures where the second luminous exposure is larger than the first  
7 luminous exposure and the third exposure is smaller than the first luminous exposure.

42. The image sensing apparatus according to claim 39, wherein said luminous exposure adjustment means adjusts the luminous exposure by changing exposure time.

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43. The image sensing apparatus according to claim 39, wherein said luminous exposure adjustment means adjusts the luminous exposure by changing aperture of an iris diaphragm.

44. The image sensing apparatus according to claim 39, wherein said luminous exposure adjustment means adjusts the luminous exposure using an electrochromic element.

45. The image sensing apparatus according to claim 39 further comprising vibration detection means for detecting vibration of the image sensing apparatus, wherein said luminous exposure adjustment means determines luminous exposures to be used on the basis of a detection result by said vibration detection means.

46. The image sensing apparatus according to claim 39 further comprising change-over means for changing between a plurality of image sensing modes which designates the number of image sensing operations to be performed for sensing an object by said image sensing means.

wherein said luminous exposure adjustment means determines luminous exposures to be used in accordance

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with the number of image sensing operations set by said change-over means.

47. An image synthesis apparatus comprising:  
image signal synthesis means having plural kinds  
of image synthesis control means for synthesizing image  
signals of a plurality of images to generate a single  
image;

relationship determination means for determining  
relationship between the plurality of images; and

selection means for selecting one of the plural  
kinds of image synthesis control means on the basis of  
a determination result by said relationship  
determination means.

48. The image sensing apparatus according to  
claim 47, wherein said relationship determination means  
is blurring detection means which detects blurring  
amounts between the plurality of images.

49. The image sensing apparatus according to  
claim 47, wherein said relationship determination means  
is correlation calculation means for calculating  
correlation between the plurality of images.

50. An image sensing apparatus comprising:

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image sensing means for converting an optical image into electric signals and outputting the electric signals as image signals;

optical means for forming the optical image of an object on said image sensing means;

shifting means for shifting an image formation position of the optical image formed on said image sensing means to a plurality of different positions;

pixel shifting control means for controlling said shifting means to shift the image formation position and controlling said image sensing means to sense a plurality of images at the respective image formation positions;

image signal synthesis means for synthesizing image signals of the plurality of images outputted by said image sensing means to generate a single high-resolution image;

blurring detection means for detecting partial blurring due to movement of the object between the plurality of images; and

image synthesis control means for controlling said image synthesis means on the basis of a detection result by said blurring detection means.

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plurality of divided areas of an image sensed by said image sensing means.

52. The image sensing apparatus according to claim 51, wherein said blurring detection means has correlation calculation means for calculating correlation between the plurality of images, and detects an area where the partial blurring due to movement of the object occurs on the basis of the calculated correlation, further detects a movement vector in the area.

53. The image sensing apparatus according to claim 50, wherein said image synthesis means has a plurality of image synthesis modes, and said image synthesis control means selects one of the plurality of image synthesis modes on the basis of the detection result by said blurring detection means.

54. The image sensing apparatus according to claim 50, wherein, when the partial blurring detected by said blurring detection means is larger than a predetermined value, said image synthesis control means prohibits said image synthesis means to synthesize the

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plurality of images in an area where the partial blurring is detected.

55. The image sensing apparatus according to claim 50, wherein, when the partial blurring detected by said blurring detection means is larger than a predetermined value, said image synthesis control means performs an image synthesis processing on an area where the partial blurring is detected which is different from an image synthesis processing performed on an area where the partial blurring is not detected.

56. The image sensing apparatus according to claim 55, wherein said image signal synthesis means generates an image in the area where the partial blurring is detected by performing sweeping processing.

57. The image sensing apparatus according to claim 50 further comprising display means,

) wherein said image synthesis control means controls said display means in accordance with an image synthesis operation performed by said image synthesis means.

58. An image sensing apparatus comprising:

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image sensing means for converting an optical image into electric signals and outputting the electric signals as image signals;

image sensing control means for controlling said image sensing means to sense a plurality of images within a predetermined period of time;

image signal synthesis means for synthesizing image signals of the plurality of images outputted by said image sensing means to generate a single image;

division means for dividing an image into a plurality of small areas;

relationship determination means for determining relationship between the plurality of images by each of the plurality of small areas; and

image synthesis control means for controlling image synthesis operation by said image signal synthesis means on the basis of the relationship between the plurality of images determined by said relationship determination means.

59. The image sensing apparatus according to claim 58 further comprising vibration detection means for detecting vibration of the image sensing apparatus by detecting uniform blurring between the plurality of images.



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wherein said relationship determination means is a blurring detection means for detecting movement of the object, and said image synthesis control means controls said image signal synthesis means on the basis of a detection result by said vibration detection means and a detection result by said blurring detection means.

60. The image sensing apparatus according to claim 58 further comprising:

vibration detection means for detecting vibration of the image sensing apparatus by detecting uniform blurring between the plurality of images; and

vibration compensation means for compensating the vibration on the basis of a detection result by said vibration detection means.

61. An image synthesis apparatus comprising:

image signal synthesis means for synthesizing image signals of a plurality of images to generate a single image;

blurring area detection means for detecting an area where a partial blurring occurs between the

movement vector detection means for detecting a movement vector in the area, detected by said blurring area detection means, between the plurality of images.

wherein said image signal synthesis means synthesizes an image in the area detected by said blurring area detection means by applying a first method using the movement vector, and synthesizes an image outside of the area by applying a second method without using the movement vector.

62. An image synthesis apparatus comprising:  
image signal synthesis means for synthesizing image signals of a plurality of images to generate a single image; and

area division means for dividing each of the plurality of images into a first image area where relationship between the plurality of images has a first relationship and a second image area where relationship between the plurality of images has a second relationship,

wherein said image signal synthesis means performs an image synthesis processing, on the first image area, which is different from an image synthesis processing performed on the second image synthesis area.